

Community News

Carbon monoxide danger insidious

(Editor's note: This article surfaced during last fall's Safety and Total Health Day observance, and while the author requested anonymity, agreed to share this frightening experience.)

One unusually cold morning two winters ago, the carbon monoxide detector in our 10-year-old house started beeping. I was leaving for work, kids already in the car. I'd read that these detectors have a tendency to give off false alarms, so assumed it must be false because no one had any symptoms, or so we thought. Irritated and hurried, I removed the battery from the detector and went to work. As I'd stood on the chair to remove it from the wall in the hallway between bedrooms, I'd gotten a fleeting, dizzy feeling. That created just enough suspicion in me to arrange for a heating contractor to take a look at our gas heater that afternoon.

The contractor detected CO coming from our heater but couldn't quantify it well with his device. Because he suspected the heat exchanger of having a few rust holes, I arranged to replace it the next day. Still, we did not notice any symptoms such as headache, nausea, dizziness, or cherry-red nails, so we decided to stay home another night.

Neither the local volunteer department nor the local Houston Fire station had a device to measure CO levels, something we learned only after we had four fire trucks and a dozen firefighters race to our home with sirens blaring, creating quite a stir. The firefighters suggested we call out the "Big Box" [hazardous materials truck], because *surely* they'd have a gauge. Instead, we tried the gas company and got our only chuckle of the night when a lone technician in a mini-pickup arrived with the necessary gauge amidst our ensemble of willing-but-gaugeless heroes.

The gas technician quantified the level of CO, which was enough to find somewhere else to spend the night. The firefighters set about airing out the house. That night, colder than the previous one, was the coldest of the year. The next day, our heat exchanger, which had more holes than metal, was replaced. Had we stayed, the heater would have run all night, and our children sleeping upstairs would have been in danger.

Much later, we found that a series of serious illnesses were linked to CO poisoning. Like many doctors, we

thought of CO poisoning as a single, extraordinary, overcoming event. We learned that CO poisoning can occur slowly over a long period of time. It binds to blood components and does not let go easily. Even fresh air does not replace CO in the bloodstream with oxygen, as CO has about 250 times more attraction to hemoglobin than does oxygen. CO poisoning mimics some illnesses and weakens the immune system.

CO does not accumulate evenly in all areas of a house. It collects, starting at the ceiling, because it is slightly lighter than air. We learned this because the only person seriously affected was our 5-year-old son who slept in a top bunk in a second floor, corner room.

My son's headaches started in October, about the same time our heater was started that season. Then came recurrent bouts of pneumonia, strep throat, flu, bronchitis, etc., illnesses too numerous to remember. By the time our CO detector went off four months later, he had fallen victim to depression caused by imbalances in his brain chemistry. This took another seven months to diagnose and more than a year to treat. For those seven months, the telltale headaches, combined with fatigue, had a debilitating effect. When asked by firefighters that night if any of us had any symptoms of CO poisoning, we hadn't considered our son's headache. He'd had it for months, but we thought of CO poisoning as a sudden event.

Here are some lessons learned:

- Don't ignore your detector or your suspicions, even if you don't notice symptoms.
- Have more than one CO detector, and place them near ceilings and in bedrooms, especially those with bunk beds.
- Many detectors, designed to minimize false alarms, can accumulate low levels of CO for a long time before beeping. Your health may be your first clue if the detector isn't well placed.
- More CO will accumulate in rooms than in the attic where the faulty heater is located. Don't put your only detector here.
- To get a quantifiable CO reading, call the gas company or check with your local volunteer fire department.
- Have your heater inspected yearly. Humidity can rust out a new one in less than 10 years.



Photo by Paul Maley

The total solar eclipse of July 11, 1991, was photographed by JSC eclipse viewing expert Paul Maley on a visit to Santiago Ixcuintla, Mexico. Houston will see a partial eclipse of 21.5 percent beginning at 10:39 a.m. Feb. 26.

Expert warns to use caution when viewing coming eclipse

Houstonians will be treated to a partial solar eclipse Feb. 26, a rare event that will not be seen again here until Dec. 14, 2001. But a JSC expert on eclipse viewing warns that not all viewing methods people try to use are safe.

Paul Maley, a manager in United Space Alliance's cargo mission support group, has seen 19 solar eclipses and is considered by many to be the local expert on safe eclipse viewing methods. He saw his first partial eclipse at age 14, but nearly injured himself because he had no expert help.

"I had to figure out how to safely observe the eclipse by myself," Maley said. "I had a small telescope that came with a green solar filter for the eyepiece. I walked away from the telescope for a minute and when I returned I noticed bright sunlight streaming through the crack in the eyepiece. From that point on, I was scared to look at the Sun with a telescope with any filter."

Maley, will be among thousands who will travel to the Lesser Antilles for a total eclipse Feb. 26. He said eclipses are spectacular events, and may be viewed safely by following a few precautions.

However, he warned, many

people still follow inaccurate information they received, often as children, regarding how to watch the eclipse safely. This is especially true concerning protective filters for directly viewing the sun.

The danger to vision is significant because there are no pain receptors in the retina. The lens in the eye acts like a magnifying glass causing burns on the retina without any feeling of pain.

"The safest and most inexpensive method to view the eclipse is by projection," Maley said.

A pinhole or small opening is used to cast the image of the Sun onto a white card placed 18 inches or more beyond the opening.

One of the most widely available filters for directly observing the Sun is a number 14 welder's glass, available through welding supply companies for about \$3.

Unsafe methods of viewing eclipses include layers of color or black and white film, medical x-ray films, smoked glass, photographic neutral density filters and polarizing filters. Solar filters that are designed to thread into eyepieces and are often sold with inexpensive telescopes, also are dangerous. They should not be used for viewing the Sun at any time since they often crack from overheating.

Final tally shows JSC generous

The JSC 1997-98 CFC has closed with record contributions to the Texas Gulf Coast CFC by JSC, and other Government employees, as well as JSC retirees. Contributions totaled \$504,085.86 which represents a 5 percent increase over last year.

The final report shows the total given by each organization, its percent of participation, its amount donated, and the percent of goal:

Office of the Director, 100 percent, \$3,427.04, 202 percent; Human Resources Office, 100 percent, \$12,917.28, 248 percent; Office of the Chief Information Officer, 100 percent, \$3,565, 149 percent; Equal Opportunity Programs Office, 100 percent, \$2,441.82, 222 percent; Legal Office, 100 percent, \$2,827, 166 percent; Office of Public Affairs, 91 percent, \$8,253, 183 percent; ISO 9000 Office, 50 percent, \$296, 37 percent; Business Management Directorate, 66 percent, \$41,172; 105 percent; Flight Crew Operations Directorate, 63 percent \$31,371, 81 percent; Mission Operations Directorate, 69 percent, \$78,906, 114 percent; Engineering Directorate, 63 percent, \$131,472, 99 percent; Information Systems Directorate, 54 percent, \$13,744, 97 percent; Technology Transfer and Commercialization Office, 100 percent; \$3,775, 145 percent; Center Operations Directorate, 74 percent, \$12,755, 72 percent; Office of the Chief Financial Officer, 71 percent, \$10,572, 124 percent; Space Shuttle Program 87 percent, \$35,537, 140 percent; Safety, Reliability, and Quality Assurance Office, 85 percent, \$22,394, 109 percent; Space Station Program Office, 58 percent, \$39,444, 94 percent; Space and Life Sciences Directorate, 75 percent, \$33,662, 80 percent; Space Operations Management Office, 100 percent, \$4,202, 102 percent; EVA Project Office, 81 percent, \$4,514, 146 percent; Phase 1 Program, 80 percent, \$3,298, 143 percent; NASA Office of Inspector General, 43 percent, \$1,644, 51 percent. In addition, the Space and Missile Systems Center, contributed \$965; JSC Retirees and JSC retirees contributed \$925.

The grand total was 69 percent participation, \$504,085, 104 percent of the goal.

Local aerospace companies share technology with students

A team of local aerospace companies have joined together to provide space education materials to all students in the Clear Creek Independent School District.

Beginning in November, all secondary schools in the district began receiving subscriptions to NASA Technology Today magazine through a grant from Lockheed Martin, AlliedSignal, Technical Services Corporation, Computer Science Corp., Booz-Allen & Hamilton, and GTE.

The magazine, which focuses on what technology-based innovation achieves through NASA endeavors, provides teaching guides and lesson plans for educators, as well as special articles and projects for students.

JSC Child Care Center has openings

The JSC Child Care Center now has a few openings in the pre-school program for children ages 3-5.

The children are learning with the accredited A Beka curriculum and through open play centers. Three year olds are introduced to

the sounds of the alphabet and 4-year-olds put the alphabet together as they begin to read.

Civil service and contractors, on or off-site, should call Kristy or Shelly at x34734 for a tour or information.

JSC Safety Alert

Riding Bicycles at JSC

What Happened

"A bicycle was coming up from behind me. As I turned to go into Building 10, the rider passed me, barely missing me. I could have been hurt badly." — Close Call Report 97-863. "In the twilight just after sunset, a bicycle rider crossed just in front of me in the crosswalk near Building 46 on Second Street. I narrowly missed this rider." — Close Call being submitted.

What You Must Do

If you ride a private or government bicycle on site, you must:

Follow paragraph 11, Table 7 of the JSC Vehicle Code. Follow Chapter 203 of the JSC Safety Requirements Handbook. Stop for pedestrians in or immediately at crosswalks. Do not pass a vehicle that is stopped at a crosswalk. Follow all traffic rules and laws for bicycle riders. Avoid riding on sidewalks if possible. Yield to pedestrians at all times. Warn pedestrians before you pass them.

What You Can Do

If you ride a private or government bicycle on site, you should:

Use common sense when passing pedestrians. Be courteous. Equip your bicycle with a horn or bell to warn pedestrians. When approaching pedestrians from either direction, slow down. Make sure it's safe to pass a pedestrian when passing from the rear. Be prepared to take evasive action if a pedestrian suddenly moves into your path of travel. There are many instances where bicycle riders have been observed doing good things such as following the rules, adding a horn, adding an orange flag to help them be seen, and wearing a helmet.

This notice is designed to help all JSC bicycle riders to do the right thing. For additional information, contact John Stanford/NA3 at x31347.